SATERN Online Training Compatibility Standards

Purpose: The purpose of this document is to provide Training Officers and Discipline Leads with an outline of NASA's approach to maximizing SATERN Online Training compatibility with the various NASA-supported desktop configurations. This document is also meant to be used as a source of guidance for Center or vendor activities that are developing online courses for SATERN. Since SATERN online courses actually run on the individual learner's desktop, maximizing compatibility between the courses and the approved desktop combinations is essential to successful online training.

Background: During 2010, numerous SATERN online training courses experienced operational failures primarily due to the courses not allowing for hardware and software differences at the desktop level. These failures ranged from the inability to launch courses, to the failure to record credit for completed training. The failures were evident in both NSSC and vendor-produced training courses. Research into the failures revealed multiple factors that contributed to individual problems. Some of those issues included:

1. The Plateau Learning Management System (LMS) that SATERN is based upon has a flaw that prevents communications between SCORM conformant desktop-loaded courses and SATERN. This issue has been around a while, however, there are known work-a-rounds for most course development products. Research by Plateau to resolve this issue is underway.
2. The Q45 build for MAC computers prevented communications between the desktop-loaded course and SATERN when using the Firefox browser – resulting in no credit for course completions. None of the known work-a-rounds have been successful in overcoming this issue.
3. Plug-in/software updates that cause issues with previously operational courses. For example, both the JAVA and Flash updates this fall caused new failures in existing courses.

Get Well Plan: In order to minimize the issues associated with desktop compatibility, the NSSC has developed a technical requirements document for online training that outlines the technology that needs to be employed in order to maximize desktop compatibility for online training. This requirements document outlines both the technical requirements and recommended best practices for Centers and vendors who are producing online training to be delivered by SATERN. The NSSC will continue to test all online training courses prior to deployment in SATERN. The following general process statements should be noted:

1. Externally-produced courses that do not pass NSSC testing on SATERN will be returned to the course owner or vendor for correction.
2. Externally-produced courses that pass NASA testing on SATERN, but do not meet the attached requirements, may be added to SATERN; however, in the event of future failures, the course will be returned to the course owner for repairs and inactivated in SATERN.
3. Course owners should not schedule course launches or due dates until courses pass SATERN testing.

Attachments

1. Technical Requirements for SATERN Online Training Courses
2. Recommended Best Practices for SATERN Online Training

Technical Requirements for SATERN Online Training Courses

General requirements:

1. Courses must meet Section 508 requirements and conform to the ADL SCORM 1.2 standard. Here are some typical Section 508 compliance requirements for all online training:

    a. The introduction page of the course must include a link visible only to screen readers for a text only equivalent version of the course content. The link will be located on the top-left of the first page so that the screen reader picks it up almost immediately (JAWS is the predominant screen reader for NASA). In addition, clicking the text only link must pass a completion status to SATERN. The learner should be informed of this at the conclusion of the text only version.

    b. All text images must contain an alt tag (alternate text) that can be read by a screen reader, such as JAWS when published.

    c. A text transcript of videos must be made available by way of a link labeled "Video Transcript" next to video player window.

2. Courses must work from a separate (new) window from the LMS.

3. Course Format:

    a. Courses need to be developed to use HTML pages, jpg or png images, and mp3 sound files.

    b. Window size in pixels should be no wider than 785 and no higher than 600.

    c. Flash-based authoring tools such as Adobe Articulate, Presenter, and Captivate that require the use of plug-ins (e.g., Flash, Silverlight) are not recommended as they frequently have compatibility issues. However, tools that produce animated gifs and swfs are OK for including in html-based courses.

4. The NSSC and Plateau recommend using the Trivantis Lectora content development tool.

5. Bookmarking - Courses must record bookmarks as the learner progresses through the course so that system communication is maintained and the learner can restart training where they left off.

Course Introduction Page Requirements:

1. The first screen of the course needs to explain how to navigate the course, how to turn optional features on and off, who to contact with questions about the course content (typically the course owner), and who to contact with technical issues with the course (NSSC Contact Center at 877-677-2123 or NASA-satern.support@nasa.gov).

2. This page must include a validation of SCORM communication (FindAPI). If SCORM communications fail, the following error message must be displayed: "Communication with SATERN cannot be established. If you continue, you will not receive credit for this course. Please exit the course, return to your Learning Plan and launch the course again. If you receive this error again, notify the NSSC Customer Contact Center at 877-677-2123 or NASA-satern.support@nasa.gov."

3. An Icon link to the NSSC desktop configuration checker needs to be available on each page, preferably in the upper right corner. The appropriate link for this icon is: https://searchpub.nssc.nasa.gov/servlet/sm.web.Fetch/ComputerAndBrowserInfo.htm?rhid=1000&did=693952&type=released

Final Course Page Requirements:

1. This page needs to explicitly state the training (or module) is complete, explain how to verify completion credit, and who to contact if completion credit was not recorded in SATERN (NSSC Contact Center at 877-677-2123 or NASA-satern.support@nasa.gov).
2. Credit for course completion will be awarded upon launching this page and not be dependent upon hitting a "Complete Course" button. The "Complete Course" button should close out the course window.
3. This page must include an automatic validation of course completion (LMSGetValue("cmi.core.lesson_status")) and indicate such completion (or failure) on the final screen. See below: If validation is not successful, the following error message must be generated.
    a. Success message: "You have reached the end of this course. This message indicates that your status of completed has been recorded to SATERN."
    b. Failure message: "There was a problem communicating with the SATERN server. Your status of complete did not record. Please close this window, exit the course, and re-launch the course from your Learning Plan. If the problem persists, contact the NSSC Customer Contact Center at 877.677.2123 or NASA-satern.support@nasa.gov."

Best Practices for SATERN Online Training Courses

1. Links to material outside the SATERN content server are strongly discouraged. Links should point to files/documents included within the course content. All links must open in a new browser window.
2. Online training should provide clear and concise navigation options that are consistent throughout the course. For consistent usability by the NASA community, we recommend the controls in Figure 1.
3. To best display the course content on the widest variety of screen settings, the NSSC recommends the following layout described in figure 1.

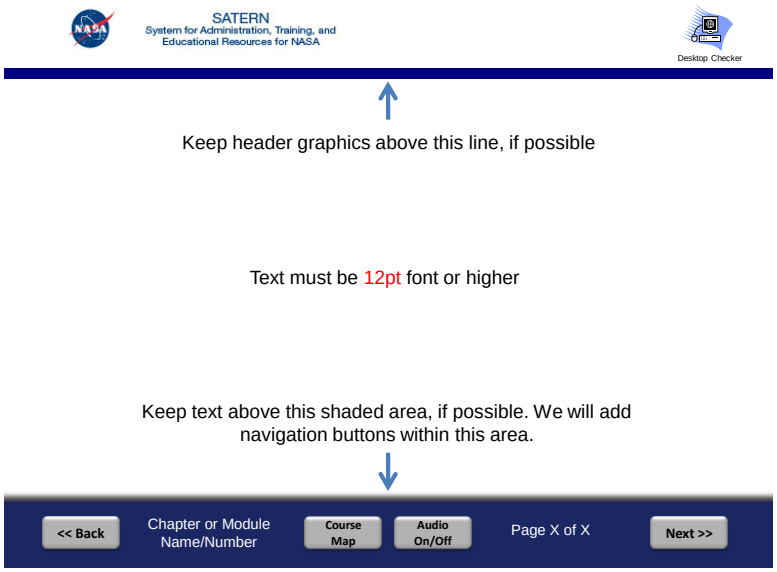

Figure 1.

4. For consistency, test questions, when used, should follow an approach similar to Figure 2.

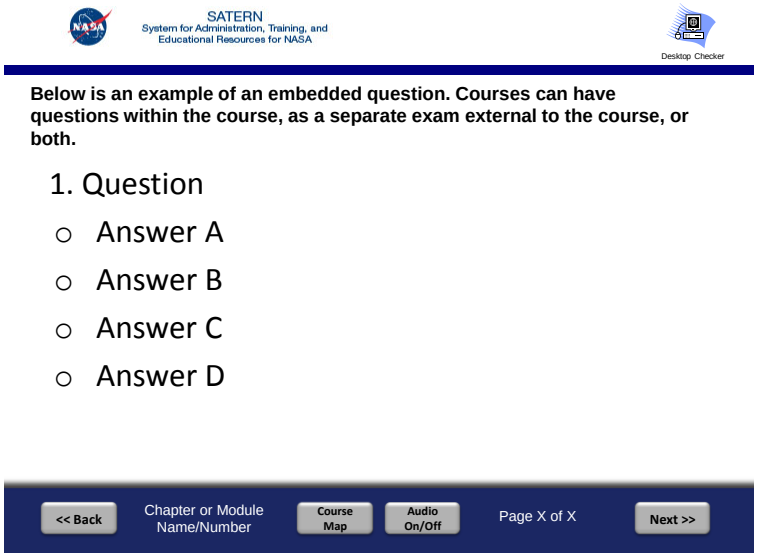

Figure 2.